

REMARKS/ARGUMENTS

In the Final Office Action dated May 18, 2006, in the above-captioned application,

Claims 1-4, 6-10, 12-14, 16-23 remain in this Application.

Claims 17-20 have been withdrawn as a result of a previous restriction.

1. § 102 Rejections

The Examiner has rejected claims 1-3, 6 and 8 under 35 U.S.C. § 102(b) as being anticipated by Swedberg, U.S. Patent No. 5,085,756.

The Examiner asserts that Swedberg teaches a capillary tube having an inlet and porous frit/filter. The Examiner also asserts that Swedberg teaches that capillaries can be made of fused silica or borosilicate glass (transparent materials).

The Examiner has also rejected claims 1-3, 6, 8 and 9 under 35 U.S.C. § 102(b) as being anticipated by He, et al, U.S. Publication No. 2003-0049862.

The Examiner asserts that He discloses a microfluidic device comprising microcolumns which may be made of glass or polymer materials, and that each microcolumn can comprise a filter membrane.

Anticipation under 35 USC § 102(b) requires the presence in a single prior art disclosure of all elements of a claimed invention arranged and operating as in the claimed invention. In the present invention, the claimed invention as represented by independent claims 1 and 14 are directed to:

1. "A microfluidic reactor for trapping one or more particles of predetermined nominal size or range of sizes, comprising:

a flow inlet;

a transparent capillary for providing an in-situ zone for analysis; and

a porous filter integrated with the transparent capillary, the filter having a plurality of smaller capillaries each having internal cross-sectional dimensions smaller than the nominal size or range of sizes of the particles and arranged so that said smaller

capillaries trap the particles in the analysis zone while a fluid flows from the flow inlet through the analysis zone and the filter.”

14. “A microfluidic reactor for trapping one or more particles of predetermined nominal size or range of sizes, comprising:

an optical detector;

a flow inlet;

a transparent capillary for providing an in-situ detection zone wherein the detection zone is arranged so as substantially to correspond in shape to the optical detector; and

a porous filter integrated with the transparent capillary, the filter having a plurality of smaller capillaries each having internal cross-sectional dimensions smaller than the nominal size or range of sizes of the particles and arranged so that said smaller capillaries trap the particles in the analysis zone while a fluid flows from the flow inlet through the analysis zone and the filter.”

The teachings of Swedberg and He differ significantly from the present invention as recited in independent claims 1 and 14. Claims 1 and 14 recite a limitation where a porous filter is integrated with the transparent capillary, the filter structurally being formed from a plurality of smaller capillaries. An example of this structural difference is shown in Fig. 2 and Fig. 3 and described in paragraphs 0029 through 0032. In the present invention, the plurality of smaller capillaries within the outer transparent capillary defines the filter. Swedberg and He do not disclose, teach or suggest a filter having this limitation, the limitation being a plurality of smaller capillaries, thus claims 1 and 14 are patentably distinguishable therefrom. Claims 2, 3, 6, 8 and 9 being dependent from claim 1 all include this limitation and thus are also patentably distinguishable from Swedberg and He.

2. § 103 Rejections

The Examiner has rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Swedberg or He in view of Chu, et al (US 5,985,164), claim 7 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Swedberg or He in view of Shukla, et al (US 6416716), claim 10 under 35 U.S.C. § 103(a) as being

unpatentable for obviousness over Swedberg or He in view of Cole, et al (US 5879949), and claim 13 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Swedberg or He in view of Roach, et al (US 20010005489). The Examiner has rejected claims 12 and 21-23 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Swedberg. The Examiner has rejected claims 14 and 16 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over He.

In order to establish a prima facie case of obviousness, Swedberg or He independently or in view of Chu, Shukla, Cole or Roach must teach or suggest all of the claim limitations. As discussed above, claim 1, from which claims 4, 7, 10, 12, 13 and 21-23 are dependent, and claim 14, from which claim 16 is dependent, are in allowable form, since they include the limitation of the filter structurally being formed from a plurality of smaller capillaries each having internal cross-sectional dimensions smaller than the nominal size or range of sizes of the particles such that the smaller capillaries trap the intended particles as discussed above. Therefore, claims 4, 7, 10, 12, 13 and 21-23, being dependent on claim 1, and claim 16 being dependent on claim 14 also contain this limitation, while Swedberg or He independently or in view of Chu, Shukla, Cole or Roach do not teach this limitation; so the rejection of claims 4, 7, 10, 12, 13, 14, 16, 21-23 as being obvious is now moot.

Accordingly, Applicant respectfully requests reconsideration of all outstanding rejections and allowance of pending claims 1-4, 6-10, 12-14, 16-23.

Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Response timely. Should Applicant be in error, Applicant respectfully requests the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Response timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to Deposit Account 03-3325.

Please direct any questions or comments to the undersigned.

7/5/06
Date

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